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Regional development, innovation policy and territorial cohesions

Norwegian experience

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Norwegian experiences

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Abstract: This paper gives a broad overview of the development in Norway with regard to regional development, and how regional policy and innovation policy are aiming at combining regional competitiveness and territorial cohesion in order to achieve economic growth in all regions, and to reduce regional disparities.

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Preface

This paper is based on a presentation given at the conference “Urbanisation and Urban Rural Integration – new Trends, New Challenges and New Breakthroughs”, at The 5th Sino-Norwegian Social policy Forum in Haikou, China December 5-6, 2009.

Oslo, January 2010

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1 Introduction

This paper gives a broad overview of the development in Norway with regard to regional development, and how regional policy and innovation policy are aiming at combining regional competitiveness and territorial cohesion, i.e. to achieve economic growth in all regions, and to reduce regional disparities.

Norway has a long tradition in regional policy and has gradually developed an innovation policy. Over time these policies have become more integrated.

The paper is organised as follows. Section 2 presents some demographic facts and gives an overview of the population structure and development. Section 3 examines first the economic development measured by GDP per capita, and by kind of main activity. Secondly, it shows the regional industrial specialisation in Norway and the development in regional employment by main industrial sectors. Thirdly, it presents the regional innovation pattern in Norway by types of innovation and regions. Section 4 gives an overview of the development of regional and innovation policies in Norway in the past decades. Section 5 concludes the paper.

2 Demography - population structure and development.

Norway is a small country with regard to population with approximately 4 850 000 inhabitants (December 2009). However, the country is large in geographical terms, stretching more than 2000 km from north to south. Norway is sparsely populated, there is only 14 inhabitants/km² compared to the European average of 118, and China 139. The country belongs to the so-called “Northern periphery” with thinly populated areas, see figure 2.1. The area of the three countries Finland, Norway and Sweden make a total of 1, 1 mill km² but have only 19 million inhabitants. That is the same size as France and Spain together and these two countries have more than 100 mill inhabitants.

Only 1.4% of the area in Norway is built-up (buildings, roads, railroads), and a mere 3.2% is devoted to agriculture. App. 45% of the territory is covered by mountains or mountains plain, and the settlement pattern is heavy influenced by topography, most of the population lives at the coast whereas the inland is emptier.

However, the vast majority (80%) lives in urban areas where the average population is 1615 inhab/km², for Oslo it is even more than 3000. The population is spread all over the country but they live in concentrated areas. Population is unevenly distributed among the different region. In 2006 one third of the total population was living in the capital region and its surrounding areas, while 18 % was concentrated in the south-west counties around the two second largest cities Bergen and Stavanger.

The population growth is strongest in the largest city-region and there has been a strong urbanisation trend over the past decades, and it seems to continue. Figure 2.2 shows the net migration flows in 2007 and it reveals a clear pattern of people moving from North to South, from remote areas to cities and towns, and this pattern has been so for decades. There is tendency that migration is strongest in periods with strong economic growth when the supply of jobs is the best.

With regard to population in Norway one could sum up as follows: Although Norway is sparsely inhabited app. 80% of the population lives in urban areas and close to 60 % of the population lives in the large city regions, and population growth is strongest in cities and in the coastal areas. Employment growth is also strongest in the larger cities. Since mostly young people move to urban areas, there is an ageing process and overrepresentation of elderly people in rural areas. This represents a challenge for regional balance and the territorial cohesion in Norway.

Figure 2.1 *The Northern Periphery*

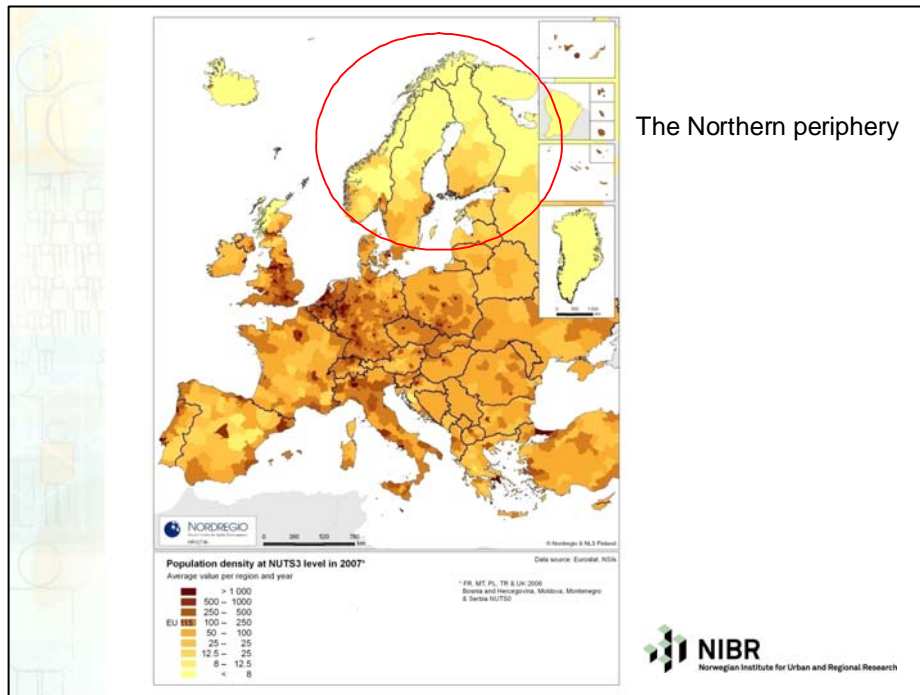
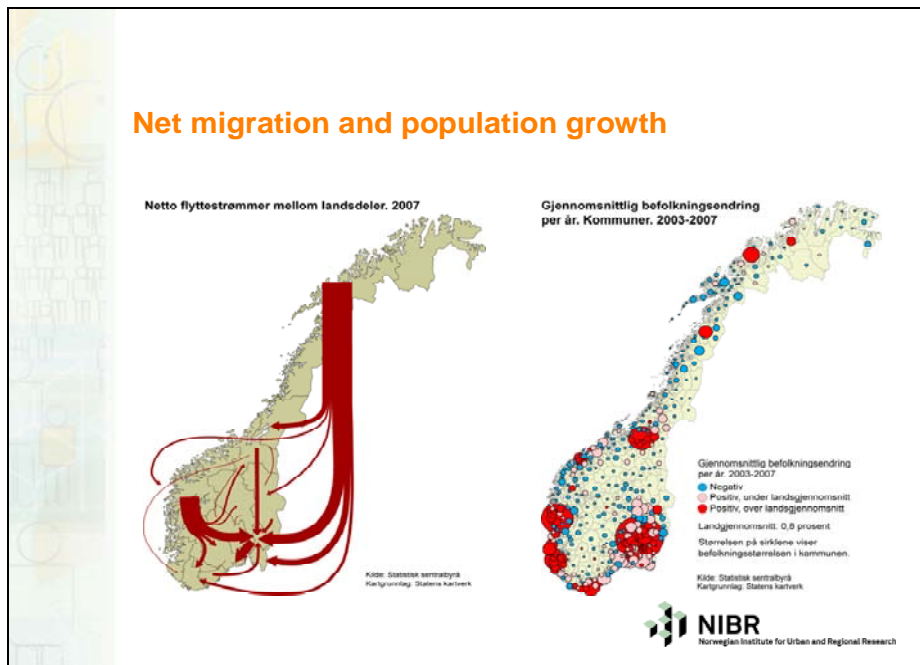


Figure 2.2 *Net migration and population growth in Norway 2007*



Source: Statistics Norway

3 Norwegian economy and industrial structure

Norway has a very open economy and an extensively trade with other countries. In addition, Norway has major investments abroad and other countries also invest a lot in Norway. The countries' openness has contributed to the economic development.

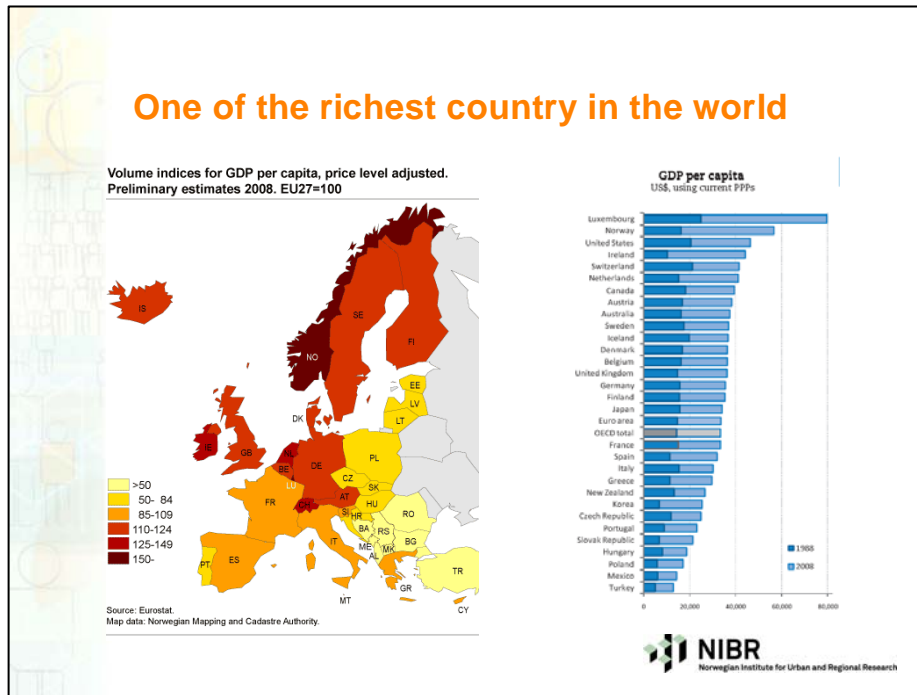
3.1 Economic development

In 1870 Norway was one of the poorer countries in Europe; GDP was only three quarters of the Western European average. Hundred years later Norway was on the average, and at the beginning of the 21st century Norway has become one of the richest countries in the world (Fagerberg et al 2009), only surpassed by Luxembourg, see graph in figure 3.1. GDP per capita is now more than 50% higher in Norway than the EU average, see map in figure 3.1. And, this is not only due to the oil. Norway was a rich country also before the oil, although oil is very important today, see figure 3.2. Today oil and gas make up more than one quarter of total GDP followed by services 21 % whereas the manufacturing industry constitute 15 %.

Norway has become rich by developing a resource-based economy. First the primary sector such as fisheries, agriculture and forestry, which today make up only 1 % of total GDP. Later by developing hydroelectricity and, in the past two-three decades the petroleum sector (oil and gas) has become the most important sector. The Norwegian economy has been successful in restructuring and it has been innovative by implementing new technology and good management and production methods. Although the economy is still resource-based it is also innovative and research-based. Norway is also competitive in specific sectors on the world market (light metals, automotive parts, maritime) thanks to improved productivity and innovation.

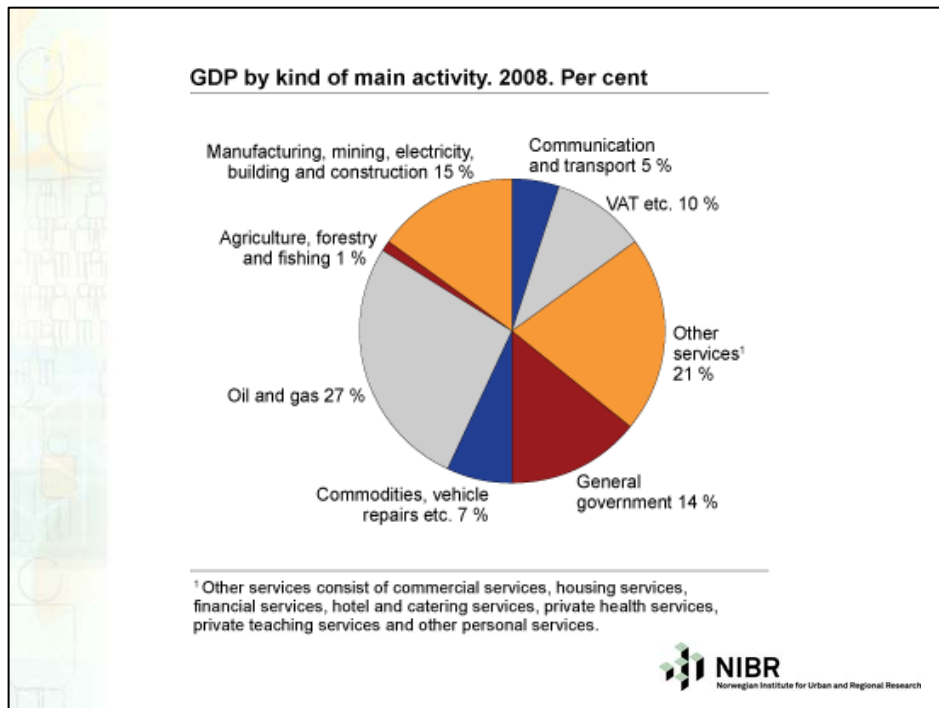
Although the wealth is fairly evenly distributed in Norway there are regional differences, see figure 3.3. The richest regions are Oslo, the capital region, and the Stavanger region which is the main oil region in Norway. The Northern regions and the inland are the less affluent regions but far from poor in international comparison.

Figure 3.1 GDP per capita in different countries

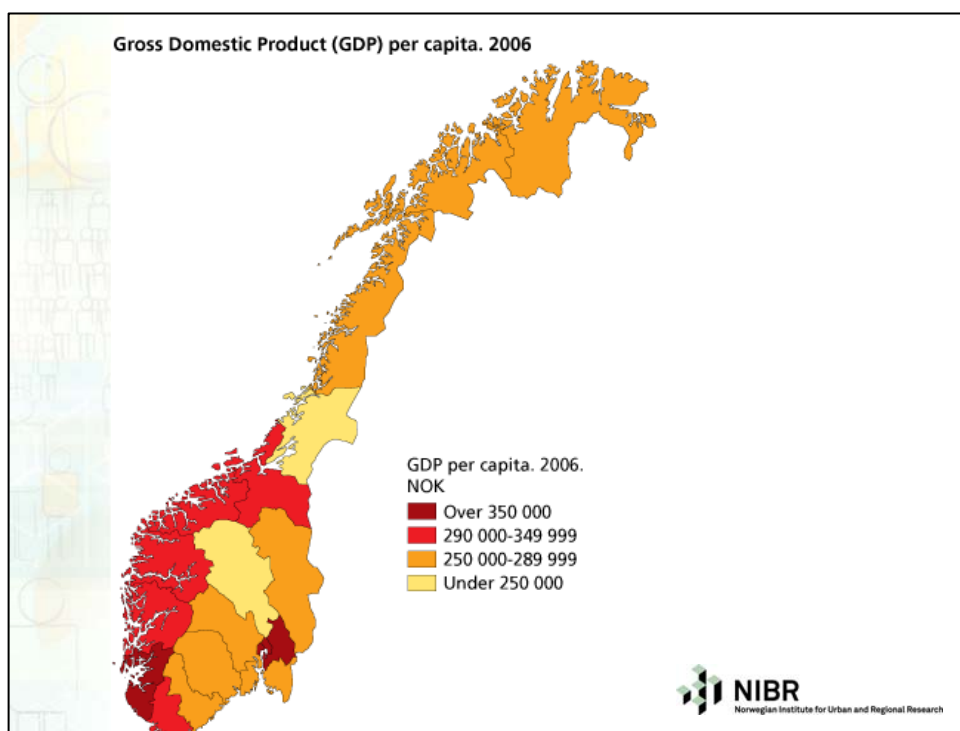


Source: Eurostat

Figure 3.2 GDP by kind of main activity in Norway, 2008



Source: Statistics Norway

Figure 3.3 *GDP per capita by region. 2006*

Source: Statistics Norway

3.2 Industrial structure, innovation and entrepreneurship

Table 3.1 shows the regional sector specialisation in Norway by means of location coefficients which is much used for measuring the importance of industries in different regions. A location coefficient of 2.0, for example, indicates that twice the percentage of workers is employed in a specific industry in that region than the percentage employed nationally for that industry.

Table 3.1 shows that the traditional manufacturing industries are overrepresented in small and medium sized towns and rural areas, and also the public sector is more important in the rural areas. The oil and gas sector has its strongholds in the larger city-regions in the western part of Norway such as Stavanger and Bergen. The service sector and the creative industries are primarily to found in metropolitan areas, i.e. in the Oslo region

This sector specialisation has implications for the authorities when they are working out the regional policy and innovation policy because the relevant policy measures must be adjusted to the regional reality: An important lesson for regional development is that there is no “one size fits all” regional innovation policy.

Table 3.1 *Regional industrial specialisation 2008*

Regional specialisation in Norway (2008).											
Types of regions:	Number of regions (Number of KIR= KI-specialized regions)	Share of population	Sector-specializations (locationqt.>1)							Tot. private sector (1-7)	Public sector
			Primary and secondary industries				Tertiary and quart.industries				
			1 Resource industries	2 Low tech manufact.	3 Hightech manufact.	4 Oil/gas/maritime	5 KIBS	6 Creative&experience.s ervice	7 Construction, retail, transp.etc.		
Large metropolitan regions (CR >1 mill.ihb.)	1 (1)	24	0,4	0,7	0,7	0,2	1,5	1,3	1,1	1,1	0,9
Large city-regions others (CR 0,2-1,0 mill. ihb.)	3 (3)	19	0,8	0,8	0,9	2,6	1,1	1,0	1,0	1,0	0,9
Medium-sized city-regions (CR 50.000-200.000 ihb.)	14 (11)	28	1,0	1,3	1,5	0,7	0,8	0,8	1,0	1,0	1,0
Small city-regions (CR 10.000-50.000 ihb.)	47 (11)	22	1,5	1,2	1,0	1,0	0,6	0,8	1,0	0,9	1,1
Small place regions (<10.000 ihb.)	96 (0)	8	2,5	1,3	0,8	0,6	0,5	0,8	0,9	0,9	1,2
Total	161 (26)	100	1	1	1	1	1	1	1	1	1


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Table 3.2 *Regional industrial employment 1998-2008*

Regional development 1998-2008 (%-change in employment)											
Types of regions	Main sectors:							Tot. private sector (1-7)	Public sector	All sectors	
	Primary and secondary industries				Tertiary and quart.industries						
	1 Resource industries	2 Low tech manufact.	3 Hightech manufact.	4 Oil/gas/maritime	5 KIBS	6 Creative&experience.s ervice	7 Construction, retail, transp.etc.				
Large metropolitan regions (CR >1 mill.ihb.)	-6,8	-8,6	-19,7	209,6	47,7	34,0	13,9	21,8	34,7	25,1	
Large city-regions others (CR 0,2-1,0 mill. ihb.)	-9,0	1,0	6,9	46,1	58,4	28,5	21,6	27,0	62,6	35,4	
Medium-sized city-regions (CR 50.000-200.000 ihb.)	-16,2	-9,7	-7,5	11,6	48,8	19,5	17,3	13,2	49,4	22,9	
Small city-regions (CR 10.000-50.000 ihb.)	-20,0	-8,3	18,0	-11,4	37,2	-1,5	18,8	8,9	47,4	19,8	
Small place regions (<10.000 ihb.)	-25,0	-13,6	-10,6	-5,0	21,2	-9,5	11,5	-3,3	43,1	9,6	
Total	-17,1	-7,9	-3,5	24,9	47,7	19,8	16,9	16,1	46,6	24,1	

(Source: SSB/NIBR, CKI-project)


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Table 3.2 shows changes in regional employment in Norway for the last ten years, and the main finding can be summarised as follows:

There has been a significant reduction in employment in primary and secondary industries which primarily is located in rural areas. In the same period there has been a substantial increase in employment in the oil and gas sector, which primarily are located urban areas and larger cities. Services, and particularly knowledge-intensive business services (KIBS) have also experienced a strong increase, and these industries are also primarily located urban areas and larger cities. Finally, there has been a strong increase in public sector employment; however, this sector is more evenly distributed in all types of regions, and therefore particularly important for maintaining employment in rural areas.

The main tendencies with regard to regional industrial employment in Norway make up the following picture:

- rural areas confront challenges with regard to employment, small places are the only ones with a negative development in private sector employment
- the employment growth rate is much stronger in urban areas/larger cities than in rural areas and small cities
- all in all rural areas are losing terrain with regard to employment and these regions are also threatened by depopulation/out-migration

Table 3.3 *RND, innovation and entrepreneurship*

	R&D expenditures		Share of innovative enterprises (%)					Share of employment (%) in innovative enterprises	Entrepreneurship and growth of enterprises (% of total population)	
	Total expenditures (1000 NOK)	Total expenditures per employee (1000 NOK)	All types of innovation	Product innovation	Design/Marketing innovation	Process innovation	Patents		All types of innovation	New establishments/year
The country	20 134 534	31	38	20	25	16	5	52	12	2
Metropolis and large city-regions	13 487 758	41	39	21	26	16	7	53	15	3
Small and medium-sized cities	5 789 822	22	37	19	24	17	5	52	10	1
Small place regions/rural areas	856 955	13	34	16	20	15	3	43	7	0

Source: NIBR/CKI-projekt2007, Statistics Norway CIS2007 and Structure business register


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Table 3.3 shows R&D and innovation in different regions in Norway, and it reveals an interesting picture. As can be seen there is a strong accumulation of R&D and

innovation resources in the large cities, three times more than in rural areas (see column 3 in table 3.3). However, the innovation rate is more or less similar across all regions. As can be seen the share of innovative enterprises is almost just as high in rural areas as in urban areas (column 4). The entrepreneurial rate, however, is much higher in urban areas (column 10).

The small or not-existing differences in innovation rates between urban and rural regions - in spite of concentration of innovation resources in urban areas - are highly interesting. Possible explanations for this can be:

- 1) *Measurement failures*, i.e. bad or wrong indicators for measuring innovation, cf. “hidden innovation” and incremental innovation, or
- 2) *System failures* in urban innovation systems, i.e. fragmentation in urban innovation systems leads to inefficient resource utilisation, or
- 3) *Compensating mechanisms* in regional policies and innovation policies which strengthen innovation in rural areas in spite of regional disadvantages.

So let's take a closer look into the Norwegian regional and innovation policy and see if this explanation seems plausible.

4 Regional policies in Norway

The Norwegian regional policy can schematically be divided into the following stages (OECD 2007):

- Rebuilding and modernisation (1945-1960)
- Planning and growth poles (1960-1975)
- Self-development and regional resource mobilisation (1975-1985)
- Market orientation and knowledge-based development (1985-1995)
- Periphery development and growth in all regions (1995-)

The first phase of regional policies dates back to the post-war period and the rebuilding and modernisation after World War II. Most important activities in this stage were related to re-construction of infrastructure and production, building of new houses.

The second period was characterised by planning optimism and the establishment of growth poles. The main goal was to ensure uniform levels of service provision in all regions, and specific regional policy measures were complemented by sector policies with broader regional development effects.

In the third period focus shifted to more self-development and regional resource mobilisation, and there was a shift from top-down to bottom-up policies.

By mid-80s and 90s a more market orientation policies with focus on endogenous growth, knowledge-based development and entrepreneurship came to the fore.

From mid-90s there has been increased focus on out-migration from the periphery, settlement patterns and regional economic development. This is in line with EU regional strategies and the combined with focus on competitiveness and cohesion.

Through the different stages a gradual shift has taken place in Norwegian regional policies. The development is characterised by a shift:

- from policies directed mainly at peripheral areas to policies for growth in all regions with more focus on regions own resources and on regional innovation
- from policies developed and implemented by central government to policies for regional partnerships and multi-level governance, i.e. from top-down to bottom-up, from central distribution to local development

4.1 Broad and narrow regional policy

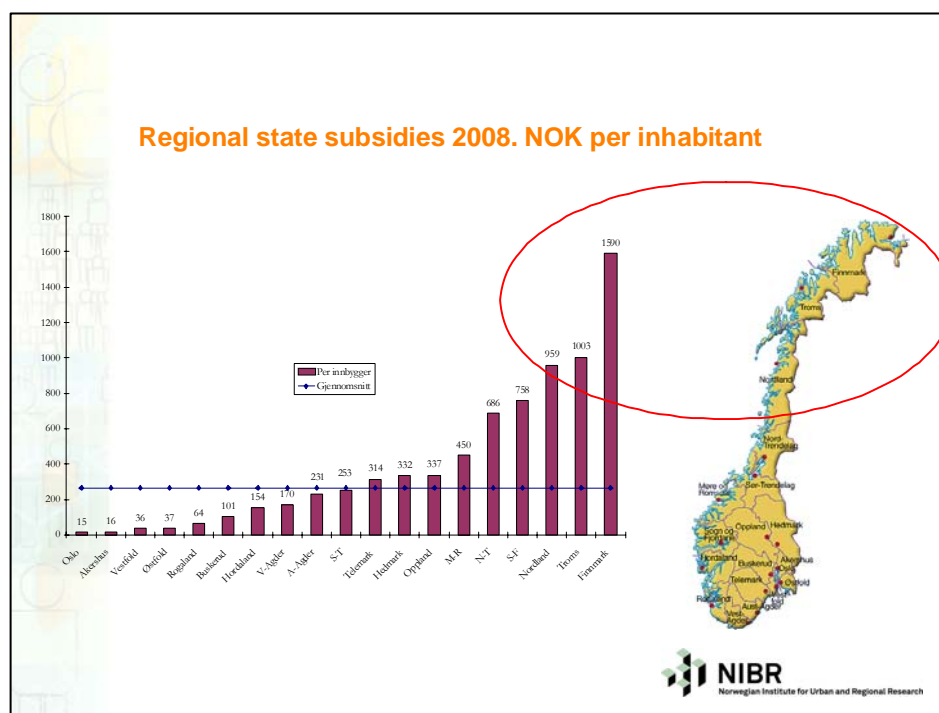
Although there has been a shift in regional policy focus with increased focus on development of regions and less on redistribution between regions, there is still several policy measures specifically directed at peripheral areas. These measures make up what we could call a narrow regional policy and it aims to compensate for problems and difficulties in remote regions. This policy is illustrated in figure 4.1 which shows the state subsidies to regional development and innovation for 2008 per inhabitant by counties. The main bulk of the money is going to the Northern part, i.e. the most peripheral part of the country. The average subsidy is 266 NOK per inhabitant but Finnmark, which is the most remote county, is receiving 1590 NOK (Johansen 2008). This is over 100 times more than Oslo (15 NOK), which the capital county, and also the richest county.

There is also a broad regional policy which refers to the general sector policies, i.e. national policies but with specific regional impacts. The amount of money spent on the broad policy is of course many times higher than the on the narrow policy, which only makes up a few percent of the amount of public expenditures. Broad regional policies with regional impacts can be:

- welfare policies, which is particularly important for peripheral areas, and as said before, the public sector is a very important employer in many regions and municipalities
- public transfer directed at activities which are overrepresented in peripheral areas will also benefit such areas, although the policy is not specifically directed at specific areas
- communication policy, transport policy etc, may have similar positive effects for peripheral areas

Table 4.1 *Regional policies schematically divided in broad and policies*

Broad regional policy	Narrow regional policy
Infrastructure	Localisation grants
Agricultural policy	Agricultural policy in specific regions
Labour market policy	Grants to sparsely populated areas
Communication policy	Employment grant
Education	Reduced pay-roll taxes
Defence	Other grants
General welfare policy	
Other index regulated expenditures	

Figure 4.1 *Regional state subsidies 2008.*

Source: Johansen 2008

4.2 Innovation policies in Norway

Innovation policies in Norway have evolved over many years. The early 1980s was characterised by a scientific and technological-oriented innovation policy which has gradually developed into a more «holistic» innovation policy with emphasis upon intangible and softer factors such as network interaction and policy integration. This implies an innovation policy across policy sectors and an increased regionalisation of policy measures.

The regionalisation of policy measures entails that the counties are more responsible for developing, run and finance policy measures. The establishment of new regional research funds in 2010 emphasises this tendency. National innovation programs for stimulating the development of industrial cluster in different regions also support the regional orientation of the Norwegian innovation policy.

According to the European Innovation Scoreboard (2007) Norway belongs to the *moderate innovators* whereas the other Scandinavian countries are to be found among the innovation leaders. Norway has a low share of R&D in GDP, particularly in the business sector and weak patenting indicating less technological activity. On the other hand, the Norwegian economy has generated strong growth in productivity, employment and income since 1970. On the other hand there is clear signs of intense non-technical innovation, such as process innovation, adoption of new technologies, engineering-based improvement, which may explain the high productivity growth. The puzzle with a low score on R&D and innovation activity but high score on productivity and growth has been explained by OECD (2008) as a result of good Working Paper 2010:102

framework condition. Close cooperation between the authorities, employees and firms together with openness and widespread acceptance for technological changes in working life, is said to be important for innovation and growth in Norway. The heterogeneous innovation system ensures a high level of education and good learning abilities in both firm and public institutions.

5 Conclusions – economic growth and territorial cohesion

Although the growth is strongest in urban areas also in Norway, there are certain factors which may explain why rural areas are not lagging behind to a greater extent. The reasons for avoiding greater regional disparities and ensuring development in rural areas may be due to both structural and political factors. Some of the most important factors are:

- The role of the public sector as a stabilising factor in rural employment
- Development of resource-based industries, new growth sectors such as aquaculture and tourism, and these industries are mainly situated in rural areas
- The role of the education sector with a network of university colleges in rural areas which open up possibilities for education and work
- Positive impacts in rural areas of both the narrow and the broad regional policies
- National innovation policies with favourable impacts on rural regions, and in the past years there has been a gradual shift to a more regionalised innovation policy and a more decentralised innovation policy model

All in all it is reasonable to say that Norway has been fairly successful in combining economic growth and a balanced regional development. The main goal of the regional policy which is to achieve growth in all parts of the country, to maintain the main settlement pattern and to ensure access to welfare services in all regions has to a large extent been accomplished. In this manner the Norwegian territorial policy is in accordance with the EU Lisbon Strategy¹ of combining competitiveness and cohesion. However, contrary to many countries, Norway has no explicit urban policy *per se*, but a well developed regional and local policy which seem to have contributed to a balanced regional development. Whether this policy is sustainable in a time with increased globalisation remains to see.

¹ Its aim is to make the EU "the most dynamic and competitive knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion, and respect for the environment by 2010". It was set out by the European Council in Lisbon in March 2000.

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